FILE 'HOME' ENTERED AT 16:28:55 ON 16 FEB 2006

=> file biosis caplus caba agricola

=> s arc6 or ftn2
L1 46 ARC6 OR FTN2

=> duplicate remove l1

L2 21 DUPLICATE REMOVE L1 (25 DUPLICATES REMOVED)

=> d ti 1-21

L2 ANSWER 1 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN
TI Cell and plastid division are coordinated through the prereplication factor AtCDT1

L2 ANSWER 2 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI Dissecting the chloroplast division machinery.

L2 ANSWER 3 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI Plastid division is mediated by combinatorial assembly of plastid division proteins.

L2 ANSWER 4 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI Photosynthesis in Arabidopsis thaliana mutants with reduced chloroplast number.

L2 ANSWER 5 OF 21 CABA COPYRIGHT 2006 CABI on STN
TI Plastid replication in Arabidopsis: complexity of the molecular components for the control of division.

L2 ANSWER 6 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN
TI Molecular analysis of the key cytokinetic components of cyanobacteria: FtsZ, ZipN and MinCDE

L2 ANSWER 7 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN
TI Transcriptional Regulation and Life-span Modulation of Cytosolic Aconitase and Ferritin Genes in C. elegans

L2 ANSWER 8 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN
TI Plastid replication in Arabidopsis: Complexity of the molecular components for the control of division

L2 ANSWER 9 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN
TI Genes associated with plastid division and the gene products and their use in altering patterns of plastid division and cell composition

L2 ANSWER 10 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on
TI **ARC6** is a J-domain plastid division protein and an evolutionary descendant of the cyanobacterial cell division protein **Ftn2**.

L2 ANSWER 11 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN
TI Cyanobacterial signature genes

L2 ANSWER 12 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI A novel gene that bears a DnaJ motif influences cyanobacterial cell division.

L2 ANSWER 13 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI Reduced gravitropism in inflorescence stems and hypocotyls, but not roots, of Arabidopsis mutants with large plastids.

L2 ANSWER 14 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN
TI Iron induces proliferation and morphogenesis in primmorphs from the marine sponge Suberites domuncula

L2 ANSWER 15 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI Chloroplast dividing proteins FtsZ1 and FtsZ2 are tightly colocalized in Arabidopsis mutants defective in FtsZ ring formation and positioning.

L2 ANSWER 16 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporationon STN
TI Chloroplast targeting, distribution and transcriptional fluctuation of AtMinD1, a eubacteria-type factor critical for chloroplast division.

L2 ANSWER 17 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI The distinctive roles of five different ARC genes in the chloroplast division process in Arabidopsis.

L2 ANSWER 18 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI Plastid ontogeny during petal development in Arabidopsis.

L2 ANSWER 19 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI Transient expression of green fluorescent protein in various plastid types following microprojectile bombardment.

L2 ANSWER 20 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI **Arc6**, an extreme chloroplast division mutant of Arabidopsis also alters proplastid proliferation and morphology in shoot and root apices.

L2 ANSWER 21 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI **Arc6**, A fertile Arabidopsis mutant with only two mesophyll cell chloroplasts.

=> d bib abs 1-5, 9 17

L2 ANSWER 1 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:549552 CAPLUS
DN 143:190051
TI Cell and plastid division are coordinated through the prereplication factor AtCDT1
AU Raynaud, Cecile; Perennes, Claudette; Reuzeau, Christophe; Catrice, Olivier; Brown, Spencer; Bergounioux, Catherine
CS Institut de Biotechnologie des Plantes, Centre National de la Recherche Scientifique, Unite Mixte de Recherche 8618, Batiment 630, Universite Paris XI, Orsay, 91405, Fr.
SO Proceedings of the National Academy of Sciences of the United States of America (2005), 102(23), 8216-8221
CODEN: PNASA6; ISSN: 0027-8424
PB National Academy of Sciences
DT Journal
LA English
AB The cell division cycle involves nuclear and cytoplasmic events, namely organelle multiplication and distribution between the daughter cells. Until now, plastid and plant cell division have been considered as independent processes because they can be uncoupled. Here, down-regulation of AtCDT1a and AtCDT1b, members of the prereplication complex, is shown to alter both nuclear DNA replication and plastid division in Arabidopsis thaliana. These data constitute mol. evidence for relationships between the cell-cycle and plastid division. Moreover, the severe developmental defects observed in AtCDT1-RNA interference (RNAi) plants underline the importance of coordinated cell and organelle division for plant growth and morphogenesis.
RE.CNT 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 2 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 2005:536212 BIOSIS
DN PREV200510321716
TI Dissecting the chloroplast division machinery.
AU Osteryoung, Katherine W. [Reprint Author]
CS Michigan State Univ, Dept Plant Biol, E Lansing, MI 48824 USA

SO FASEB Journal, (MAR 7 2005) Vol. 19, No. 5, Suppl. S, Part 2, pp. A1722. Meeting Info.: Experimental Biology 2005 Meeting/35th International Congress of Physiological Sciences. San Diego, CA, USA. March 31 -April 06, 2005. Amer Assoc Anatomists; Amer Assoc Immunologists; Amer Physiol Soc; Amer Soc Biochem & Mol Biol; Amer Soc Investigat Pathol; Amer Soc Nutr Sci; Amer Soc Pharmacol & Expt Therapeut; Int Union Physiol Sci. CODEN: FAJOEC. ISSN: 0892-6638.
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LA English
ED Entered STN: 1 Dec 2005
Last Updated on STN: 1 Dec 2005
AB The division of double-membraned chloroplasts in plant cells is orchestrated by a complex macromolecular machine with components positioned on both the inner and outer surfaces of the organelle and in the intermembrane space. The components of the chloroplast division apparatus must be properly assembled and their biochemical activities coordinated across the two envelope membranes to achieve chloroplast division. The long-term goal of our research is to understand the molecular events driving the constriction of the organelle and its separation into the two daughter plastids. Towards this end, we are using a combination of systems and approaches to identify the components of the chloroplast division complex and establish their biochemical functions. Consistent with thecyanobacterial origin of chloroplasts, most of the plastid division proteins we and others have identified thus far (reviewed in Osteryoung and Nunnari 2003, Science 302: 1698-1704) are evolutionarily related to cell division proteins found in prokaryotes, and are localized inside the organelle. These include,among others, the tubulin-like FtsZ1 and FtsZ2 proteins, and the J-domain-like protein **ARC6**, all of which localize to mid-plastid rings in the chloroplast stroma. Recently, we have uncovered several new cyanobacterial cell division genes that may facilitate identification of additional plastid division genes and proteins. We have also identified one plastid division protein, ARC5, whichis a member of the dynamin family of GTPases and is localized on the cytosolic surface of the outer envelope membrane. This protein has no immediate counterparts in bacteria. Together, these data indicate that the chloroplast division apparatus is an evolutionary hybrid, comprising components derived from boththe endosymbiotic ancestor of chloroplasts and its eukaryotic host.

L2 ANSWER 3 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 2005:551498 BIOSIS
DN PREV200510346823
TI Plastid division is mediated by combinatorial assembly of plastid division proteins.
AU Maple, Jodi; Aldridge, Cassie; Moller, Simon Geir [Reprint Author]
CS Univ Leicester, Dept Biol, Univ Rd, Leicester LE1 7RH, Leics, UK
sgm5@le.ac.uk
SO Plant Journal, (SEP 2005) Vol. 43, No. 6, pp. 811-823.
ISSN: 0960-7412.
DT Article
LA English
ED Entered STN: 7 Dec 2005
Last Updated on STN: 7 Dec 2005
AB Plastids arise by division from pre-existing organelles, and with the recent characterization of several new components of plastid division our understanding of the division process in higher plants has improved dramatically. However, it is still not known how these different protein components act together during division. Here we analyse protein-protein interactions between all known stromal plastid division proteins. Using a combination of quantitative yeast two-hybrid assays, in planta co-localization studies, fluorescence resonance energy transfer and bimolecular fluorescence complementation assays we show that these proteins do not act in isolation but rather in protein complexes to govern appropriate plastid division. We have previously shown that AtMinD1 forms functional homodimers and we show here that in addition to homodimerization AtMinD1 also interacts with AtMinE1. Furthermore,

AtMinE1 has the ability to homodimerize. We also demonstrate that proteins from both FtsZ families (AtFtsZ1-1 and AtFtsZ2-1) not only interact with themselves but also with each other, and we show that these interactions are not dependent on correct Z-ring formation. Further to this we demonstrate that **ARC6** specifically interacts with the core domain of AtFtsZ2-1, but not with AtFtsZ1-1, providing in planta evidence for a functional difference between the two FtsZ protein families in plants. Our studies have enabled us to construct a meaningful intraplastidic protein-protein interaction map of all known stromal plastid division proteins in Arabidopsis.

L2 ANSWER 4 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 2005:543423 BIOSIS
DN PREV200510332291
TI Photosynthesis in Arabidopsis thaliana mutants with reduced chloroplast number.
AU Austin, Jotham II; Webber, Andrew N. [Reprint Author]
CS Arizona State Univ, Sch Life Sci, POB 871601, Tempe, AZ 85287 USA
andrew.webber@asu.edu
SO Photosynthesis Research, (SEP 2005) Vol. 85, No. 3, pp. 373-384.
CODEN: PHRSDI. ISSN: 0166-8595.
DT Article
LA English
ED Entered STN: 1 Dec 2005
Last Updated on STN: 1 Dec 2005
AB We have used a class of Arabidopsis mutants altered in the accumulation and replication of chloroplasts (arc mutants) to investigate the effect of reduced chloroplast number on the photosynthetic competence of leaves. Each of the arc mutants examined (arc3, arc5, and **arc6**) accumulate only a few (2-15) large chloroplasts per mesophyll cell [K.A. Pyke and R.M. Leech (1992) Plant Physiology 99: 1005-1008]. The increased plastid size maintains a constant plastid to mesophyll cell volume, which has been suggested to compensate for the lower chloroplast number. In fact, we find that reduced chloroplast number has an effect on both the composition and structure of the photosynthetic apparatus, and that each arc mutant has an altered photosynthetic capacity, and we conclude that photosynthetic competence is dependent on proper chloroplast division and development.

L2 ANSWER 5 OF 21 CABA COPYRIGHT 2006 CABI on STN
AN 2005:139292 CABA
DN 20053130501
TI Plastid replication in Arabidopsis: complexity of the molecular components for the control of division
AU Fujiwara, M. T.; Sato, N.; Pandalai, S. G. [EDITOR]
CS Department of Life Sciences, Graduate School of Arts and Sciences, The University of Tokyo, Komaba 3-8-1, Meguro, Tokyo 153-8902, Japan.
MTF1@mac.com; naokisat@bio.c.u-tokyo.ac.jp
SO Recent research developments in plant science. Vol. 2, (2004) pp. 219-248. 189 ref.
Publisher: Research Signpost. Trivandrum
ISBN: 81-7736-239-9
CY India
DT Book; Book Article
LA English
ED Entered STN: 20050902
Last Updated on STN: 20050902
AB Plastid replication, comprising plastid division and plastid DNA replication and distribution, is a critical issue in the field of general cell biology. In the past decade, our knowledge of plastid division has increased largely owing to genetic and molecular genetic approaches as well as to refined cytological approaches. Plastid division involves binary fission and the coordinated actions of both prokaryotic and eukaryotic proteins. In Arabidopsis thaliana, cyanobacterial cell-division-related proteins (AtFtsZ1-1, AtFtsZ2-1, AtFtsZ2-2, AtMinD1/ARC11, AtMinE1, and **ARC6**) play major roles in the initial stage of plastid division, while the eukaryotic dynamin-like

protein (ARC5) appears to be critical for the constriction and fission of plastid envelope membranes at the later stage. Novel division regulators (CRL, GCI) hitherto not characterised have recently been identified. In addition, our understanding of the complexity of plastid division components, in terms of their molecular structures and functions, is still expanding, as evidenced by the discovery of hybrid-type proteins (ARTEMIS, ARC3). This review summarises our current knowledge of the molecular control of plastid division, focusing on the components found in a model plant, Arabidopsis thaliana. Also, the importance of plastid DNA (nucleoid) partition as an integral part of plastid replication is emphasised.

L2 ANSWER 9 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:3006 CAPLUS
DN 140:74181
TI Genes associated with plastid division and the gene products and their use in altering patterns of plastid division and cell composition
IN Osteryoung, Katherine W.; Vitha, Stanislav; Koksharova, Olga A.; Gao, Hongbo
PA Board of Trustees Operating Michigan State University, USA
SO PCT Int. Appl., 287 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004001003	A2	20031231	WO 2003-US19536	20030620
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2490004	AA	20031231	CA 2003-2490004	20030620
US 2004139500	A1	20040715	US 2003-600070	20030620
PRAI US 2002-390140P	P	20020620		
US 2002-402242P	P	20020809		
US 2003-600070	A	20030620		
WO 2003-US19536	W	20030620		

AB The present invention relates to genes encoding proteins involved in prokaryotic type or plastid division and/or morphol. and the encoded proteins, and in particular to isolated **Ftn2** (**ARC6**), ARC5, and Fzo-like genes and polypeptides. Genes involved in plastid division and the similar function of prokaryotic cell division are identified by sequence homol.,. The genes or gene products may be targets for regulation of plastid content in cells to alter cell composition or properties (no data).

L2 ANSWER 17 OF 21 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation onSTN
DUPLICATE 7
AN 1999:431683 BIOSIS
DN PREV199900431683
TI The distinctive roles of five different ARC genes in the chloroplast division process in Arabidopsis.
AU Marrison, Joanne L.; Rutherford, Stephen M.; Robertson, Elizabeth J.; Lister, Clare; Dean, Caroline; Leech, Rachel M. [Reprint author]
CS Department of Biology, University of York, York, YO1 5YW, UK
SO Plant Journal, (June, 1999) Vol. 18, No. 6, pp. 651-662. print.
ISSN: 0960-7412.
DT Article
LA English
ED Entered STN: 18 Oct 1999

Last Updated on STN: 18 Oct 1999

AB ARC (accumulation and replication of chloroplasts) genes control different aspects of the chloroplast division process in higher plants. In order to establish the hierarchy of the ARC genes in the chloroplast division process and to provide evidence for their specific roles, double mutants were constructed between arc11, **arc6**, arc5, arc3 and arc1 in all combinations and phenotypically analysed. arc11 is a new nuclear recessive mutant with 29 chloroplasts compared with 120 in wild type. All the phenotypes of the double mutants are unambiguous. ARC1 down-regulates proplastid division but is on a separate pathway from ARC3, ARCS, **ARC6** and ARC11. **ARC6** initiates both proplastid and chloroplast division. ARC3 controls the rate of chloroplast expansion and ARC11 the central positioning of the final division plane in chloroplast division. ARC5 facilitates separation of the two daughter chloroplasts. ARC5 maps to chromosome 3 and ARC11 and **ARC6** map approximately 60 cM apart on chromosome 5.

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STN INTERNATIONAL SESSION SUSPENDED AT 16:33:36 ON 16 FEB 2006